

MONTHLY OPERATING REPORT

BROWNS FERRY NUCLEAR PLANT

TENNESSEE VALLEY AUTHORITY

AUGUST 1988

"Safety and Quality are Paramount"

DOCKET NUMBERS 50-259, 50-260, AND 50-296

LICENSE NUMBERS DPR-33, DPR-52, AND DPR-68

Submitted by:

*R. McKee for*

Guy G. Campbell III  
Plant Manager

8809290380 880831  
PDR ADOCK 05000259  
R PNU

2524  
140

## TABLE OF CONTENTS

### PART I OPERATIONAL SUMMARY

A. Significant Operational Events Summary.....	1
B. Fuel Performance and Spent Fuel Storage Capabilities Summary.....	2
C. Main Steam Relief Valve (MSRVs) Actuation Summary.....	5
D. Issuance of Special Reports Summary.....	6
E. Licensee Event Reports Summary.....	7
F. Offsite Dose Calculation Manual Changes.....	10
G. Radwaste Summary.....	11
1. Total volume of solid waste shipped off site	
2. Nature of the waste (trash, resins, etc.)	
3. Gross curie activity	
4. Dates the material was shipped and the disposal facility to which the material was shipped.	
5. Estimated quantities of spent resin in storage.	
6. Estimated amount of spent resin that will be generated in the following month.	
7. Waste type and volume of radwaste containers that are onsite awaiting shipment.	

### PART II OPERATING STATISTICS

A. NRC Reports	
1. Operating Data Report.....	20
2. Average Daily Power Level.....	23
3. Unit Shutdowns and Power Reductions.....	26
B. TVA Reports	
1. Plant Operating Statistics.....	29
2. Unit Outage and Availability Data.....	30
3. Reactor Histogram (Reactor Power Percent).....	33

TABLE OF CONTENTS

(Continued)

Part III MAINTENANCE SUMMARY

A.	Electrical Maintenance.....	34
B.	Instrument Maintenance.....	34
C.	Mechanical Maintenance.....	34
D.	Running Maintenance.....	34
E.	Modifications.....	34

PART IV OTHER REPORTS

A. Chemistry Summary

1.	Primary Coolant Chemistry .....	35
2.	Environmental Technical Specification Requirements.....	38
3.	Airborne Releases.....	39
4.	Liquid Releases.....	44
5.	Resin Usage Report.....	48
6.	Fuel Cladding Integrity Parameters.....	49
7.	Waste Treatment System Throughputs.....	50
B.	Testing Summary.....	51
C.	Reactor Vessel Fatigue Usage Evaluation.....	53
D.	Change in Procedures.....	54
E.	Plant Instruction Revisions.....	54
F.	Change in Plant Organization.....	55
G.	Accidents.....	56

OPERATIONAL  
SUMMARY



## SIGNIFICANT OPERATIONAL EVENTS SUMMARY

AUGUST 1988

Unit 1

08/01/88	0001	Unit remains on administrative hold to resolve various TVA and NRC concerns.
08/31/88	2400	Unit remains on administrative hold to resolve various TVA and NRC concerns.

Unit 2

08/01/88	0001	Unit remains on administrative hold to resolve various TVA and NRC concerns. Cycle 5 refueling and modifications continue.
08/31/88	2400	Unit remains on administrative hold to resolve various TVA and NRC concerns. Cycle 5 refueling and modifications continue.

Unit 3

08/01/88	0001	Unit remains on administrative hold to resolve various TVA and NRC concerns.
08/31/88	2400	Unit remains on administrative hold to resolve various TVA and NRC concerns.

## FUEL PERFORMANCE AND SPENT FUEL STORAGE CAPABILITIES SUMMARY

AUGUST 1988

Unit 1

Unit 1 was placed on administrative hold in March 1985 to resolve TVA and NRC concerns. The unit also began its sixth refueling on June 1, 1985, with a scheduled restart date to be determined. The sixth refueling will involve loading 8x8R (retrofit) fuel assemblies into the core. The prior-to-startup unit 1 modifications are environmental qualification of electrical equipment (10CFR50.49), torus modification (NUREG 0661), containment instrumentation modifications (NUREG 0737), fire protection changes (Appendix R 10CFR50 (all)), MSIV leak rate reduction modifications, modification of masonry walls (IEB 80-11), evaluation of the vent drain and test connections (LER 82020), valve leak rate testing modifications (Appendix J), HPCI improvements, modification of PCIS logic (LER 259 85009), replacement of plant process computers, seismic qualifications of piping (IEB 79-02/14), post-accident sampling modifications (NUREG 0737), RPS voltage monitoring modifications, H<sub>2</sub>O<sub>2</sub> sample line modification (LER 81050), and EECW (carbon to stainless pipe changeout).

There are zero assemblies in the reactor vessel. The spent fuel storage pool presently contains 284 new assemblies, 512 EOC-6, 267 EOC-5, 245 EOC-4, 362 EOC-3, 26 EOC 2, and 168 EOC-1 assemblies. The 252 EOC-6 assemblies were transferred to unit 2 SFSP. The present available capacity of the fuel pool is 1607 locations.

## FUEL PERFORMANCE AND SPENT FUEL STORAGE CAPABILITIES SUMMARY

(CONTINUED)

AUGUST 1988

Unit 2

Unit 2 was shut down on September 15, 1984, for its fifth refueling outage with a scheduled restart date to be determined. On September 3, 1985, the unit was placed on administrative hold to resolve TVA and NRC safety concerns. The fifth refueling involves loading 8x8R (retrofit) fuel assemblies into the core. The prior-to-startup unit 2 modifications are CRD SDIV piping modification (IEB 80-17), environmental qualification of electrical equipment (10CFR50.49), torus structural modifications (NUREG 0661), containment instrumentation modification (NUREG 0737), fire protection changes (Appendix R 10CFR50), MSIV leak rate reductions modifications, modification of masonry walls (IEB 80-11), addition of feedwater nozzle temperature monitoring (NUREG 0619), evaluation of the vent drain and test connections (LER 82020), valve leak rate testing modifications (Appendix J), D/G speed sensor installation (LER 81004), HPCI and RCIC testable check valve changeout, modification of PCIS logic (LER 259 85009), HPCI improvements, various seismic program review, and EECW carbon to stainless pipe changeout.

There are zero assemblies in the reactor vessel. The spent fuel storage pool presently contains 304 new assemblies, 252 unit 1 EOC-6, 764 EOC-5, 248 EOC-4, 352 EOC-3, 156 EOC-2, and 132 EOC-1 assemblies. The 252 EOC-6 assemblies were transferred from unit 1 SFSP. The present available capacity of the fuel pool is 1,229 locations.

## FUEL PERFORMANCE AND SPENT FUEL STORAGE CAPABILITIES SUMMARY

(CONTINUED)

AUGUST 1988

Unit 3

Unit 3 was shut down on March 9, 1985, and placed on administrative hold to resolve various TVA and NRC concerns with a scheduled restart date to be determined. The sixth refueling outage involves loading 8x8R (retrofit) assemblies into the core and ATWS modifications. The prior-to-startup unit 3 modifications are environmental qualification of electrical equipment (10CFR50.49), containment modifications (NUREG 0737), fire protection changes (Appendix R 10CFR50), MSIV leak rate reduction modifications, modification of masonry walls (IEB 80-11), evaluation of the vent drain and test connections (LER 82020), valve leak rate testing modifications (Appendix J), HPCI concerns, replacement of plant process computer, seismic qualification of piping (IEB 79-02/14), post-accident sampling modification (NUREG 0737), addition of redundant drywell control air supply, RPS voltage monitoring modification, H<sub>2</sub>O<sub>2</sub> sample line modification (LER 81050), replacement of jet pump holddown beam assemblies (IEB 80-07), EECW carbon to stainless pipe changeout, and plant design upgrade to seismic qualification.

There are zero assemblies in the reactor vessel. The spent fuel storage pool presently contains 764 assemblies to finish cycle 6, 248 EOC-5, 280 EOC-4, 376 EOC-3, 97 EOC-2, and 3 EOC-1 assemblies. The present available capacity of the fuel pool is 585 locations.

MAIN STEAM RELIEF VALVE (MSRVs) SUMMARY

AUGUST 1988

No MSRVs were challenged during the month.

1724n

ISSUANCE OF SPECIAL REPORTS

AUGUST 1988

There were no violation notices issued for the month of August 1988.

LICENSEE EVENT REPORT(s)  
 AUGUST 1988  
Description of Event

LER

1-87-027  
 Rev. C1

Inoperable Hand Control Valve Blocks High Pressure Coolant  
 Injection Torus Water Supply

On September 15, 1987, at 1000 hours, while performing layup maintenance on unit 1, it was discovered that a 16-inch hand control valve in the high pressure coolant injection suction line from the torus had the valve stem separated from the valve disc and could not be opened. The Associated Control Equipment, Inc., hand control valve disc and shaft are connected by a key. The key is held in place by a cover plate secured by four bolts. Three of the bolts had failed permitting the shaft and disc to separate. A metallurgical analysis determined the cause of the bolt failure to be tensile overload.

The bolts were replaced on the broken valve. Similar valves on all three units were inspected and valve operation verified. No other failures were identified.

The failure of this valve is considered an isolated case based on failure mechanism, valve maintenance history, and inspection results of similar valves. The valves are scheduled to be inspected and tested during the next refueling outage on each unit.

1-88-021

Control Power Transfer on 4KV Shutdown Board Causes Unplanned  
 Start of Residual Heat Removal Service Water (RHRSW) Pump

On July 18, 1988, at 2040 hours with all three units defueled, there was an unplanned start of the B1 RHRSW pump, an engineered safety feature (ESF).

The monthly operability test on the 3A diesel generator (DG) was in progress and the DG was running. The B1 RHRSW pump had started automatically per the DG test and had been manually stopped. The 250 VDC control power to the 3EC 4KV shutdown board was realigned per special operating instruction (SOI)-23 in order to meet secondary containment requirements to continue fuel handling operations. The 3A DG was still running. The control power transfer caused a momentary voltage drop to the RHRSW pump B1 start logic. A time delay start relay and the auto start lockout relay were deenergized and therefore reinitialized. Following a 28-second time delay, the RHRSW

1724n



Description of Event  
(Continued)

LER

2-88-021 pump restarted. The cause of the event was determined to be the  
(Continued) control power transfer with the DG running. The B1 RHRSW pump  
was intentionally left in operation. SOI-23 will be revised.

1-88-022 Unplanned Containment Isolations Caused by Failure of Logic  
Relay Coil

On July 20, 1988, at 2135 hours with all three units defueled and work in progress over the spent fuel storage pools, Browns Ferry unit 1 received a spurious refuel zone high radiation signal which caused isolations of primary containment, refuel zone, and main control room ventilation systems and initiated the standby gas treatment (SBGT) and the control room emergency ventilation systems. As a result of the SBGT initiation, the reactor building pressure decreased causing reactor zone ventilation isolations. The other refuel zone exhaust radiation monitors were operable and indicating normal radiation levels. Work over the spent fuel storage pools was stopped.

The spurious high radiation signal was generated by the failure of the upscale relay coil in the unit 1, B train, refuel exhaust radiation monitoring circuit. A definitive cause for the coil failure has not been determined. The investigation is continuing into the cause of the relay coil failure and a supplemental report will be submitted.

Corrective maintenance was initiated to replace the relay. Following repair, the radiation monitor was functionally tested and returned to service. All affected systems were returned to normal by 2020 hours on July 21, 1988. Upgrade of these relays had been previously initiated but is awaiting material delivery for the refuel zone and reactor zone exhaust radiation monitors.

2-88-004 Personnel Error Initiates Engineered Safety Features

On July 1, 1988, at 1205 hours and again at 1310 hours with all three units defueled, a low reactor water level signal was received by the reactor protection system (RPS). This initiated standby gas treatment and control room emergency ventilation. The unit 2 reactor zone ventilation isolated, the refueling zone ventilation isolated, and an isolation signal was sent to the unit 2 isolation valves on the reactor water cleanup, residual heat removal, primary containment ventilation, and traversing incore probe. The second event occurred while investigating the



Description of Event  
(Continued)

LER

2-88-004  
(Continued)      cause of the first event. Both events were caused by draining sensing lines on a unit 2 reactor vessel level transmitter and a reactor pressure transmitter during performance of a modification, without an adequate clearance. This was due to a personnel error on the part of the responsible modifications engineer in filling out the clearance request and the assistant shift operations supervisor in establishing the clearance. The sensing lines were capped, isolations reset, and all ventilation systems returned to normal. A second clearance was issued to prevent recurrence. The individuals involved have been counseled.

OFFSITE DOSE CALCULATION MANUAL CHANGES

AUGUST 1988

No changes were made to the Browns Ferry offsite dose calculation manual during the month.

1724n

RADWASTE SUMMARY

AUGUST 1988

The radwaste system performed as designed. Approximately  $9.95E+05$  gallons of waste liquid were discharged containing approximately  $1.67E-02$  curies of activity.

There were two spent resin shipments and two trash shipments during August. All shipments were to Barnwell, South Carolina.

Dewatered Spent Resin Shipments<sup>(1)</sup>

Volume of condensate/waste resin shipped: 7.04 Cu.M. (247 Cu.Ft.)

Total curies shipped: 33.536

Volume of reactor cleanup resin shipped: 0 Cu.M. (0 Cu.Ft.)

Total curies shipped: 0

<u>Date Shipped</u>	<u>Disposal Facility</u>	<u>Type of Resin</u>
08/01/88	Barnwell, SC	CWPS
08/23/88	Barnwell, SC	CWPS

Dry Active Waste<sup>(1)</sup>

Number of drums shipped: 46 Volume: 9.83 Cu.M. (345.0 Cu.Ft.)

Total curies shipped: 0.5486

Number of boxes shipped: 15 Volume: 41.31 Cu.M. (1449.1 Cu.Ft.)

Total curies shipped: 3.2713

<u>Date Shipped</u>	<u>Disposal Facility</u>	<u>Type of Package</u>
08/10/88	Barnwell, SC	Drums/Boxes
08/30/88	Barnwell, SC	Boxes

(1) All shipments were by Sole-Use Vehicle

Summary

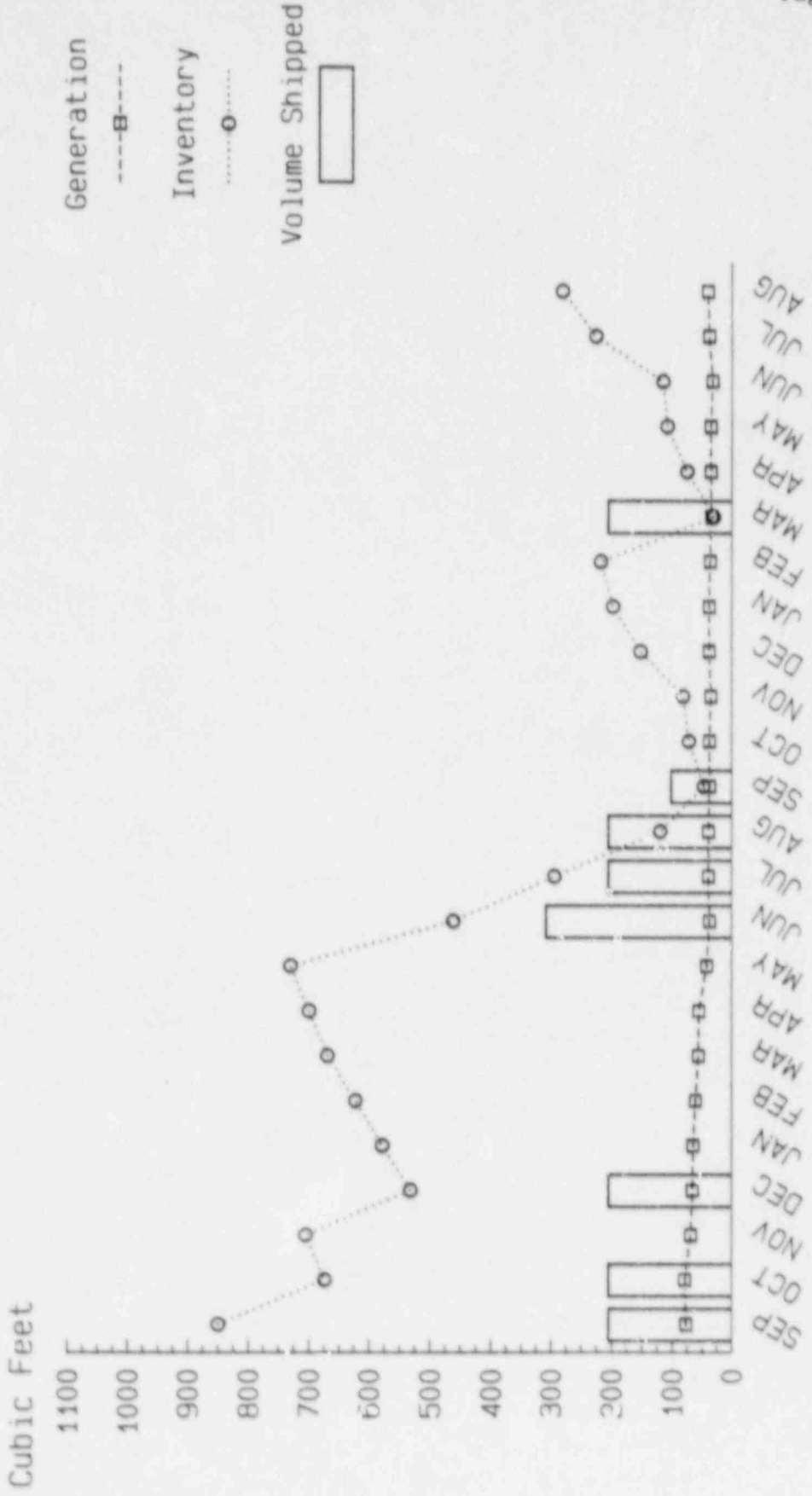
Type of Waste	Shipped to Barnwell During Month	Packaged on Site Awaiting Shipment	Gross Curie Content by Type of Waste	Estimated Generation for Next Month
Compacted Drums	285.0 Cu.Ft. (2)	555 Cu.Ft.	1.16E-01	1200 Cu.Ft. (2)
Boxes	463 Cu.Ft. (2)	186 Cu.Ft.	3.17E+00	800 Cu.Ft. (2)
Uncompacted Drums	60 Cu.Ft. (2)	0 Cu.Ft.	4.34E-01	0 Cu.Ft. (2)
Boxes	984.1 Cu.Ft. (2)	894 Cu.Ft.	1.00E-01	1600 Cu.Ft. (2)
Resins CWPS	247 Cu.Ft. (1)	1569 Cu.Ft. (3)	3.35E+01	450 Cu.Ft. (1)
RWC'	0 Cu.Ft. (1)	280 Cu.Ft. (3)	0.00E+00	40 Cu.Ft. (1)
<b>TOTALS</b>	<b>2085 Cu.Ft. (2)</b>	<b>1635 Cu.Ft. (4)</b>	<b>3.73E+01</b>	<b>3,600 Cu.Ft. (4)</b>

Total volume of waste shipped during the month: 2,085 Cu.Ft. (2)  
 Total volume of waste shipped year-to-date: 16,642 Cu.Ft.  
 Unused 1988 burial volume allocation at Barnwell: 66,158 Cu.Ft.

- (1) Actual resin volume
- (2) Container burial volume
- (3) Estimated volume in reparators
- (4) Does not include resins

# BROWNS FERRY NUCLEAR PLANT

RWCU Resin / Sludge  
 Generation - Inventory - Shipped



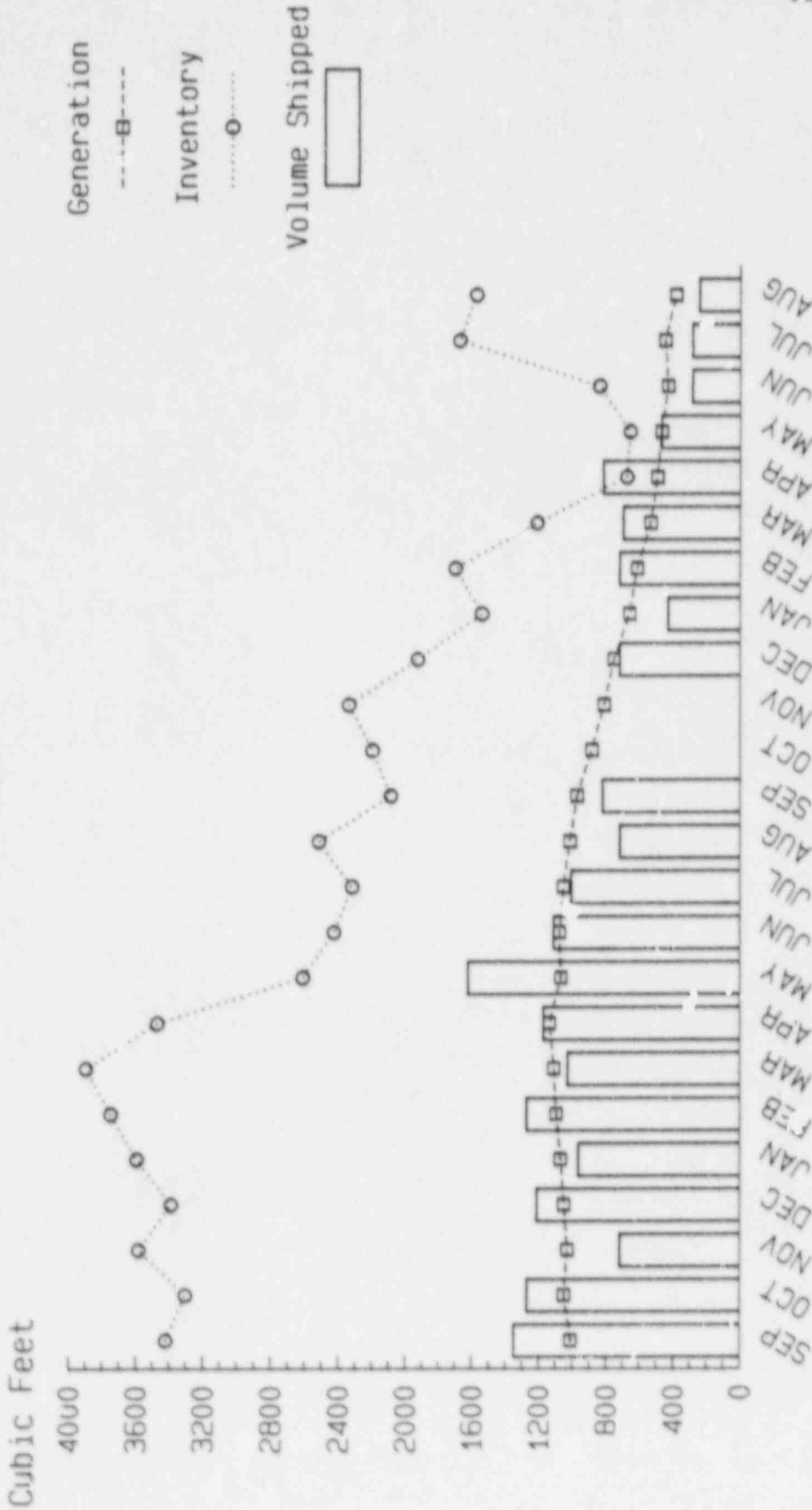
September 1986 thru August 1988

Generation is 12-Month Sliding Average  
 Inventory On Hand As Of Last Day Of Month  
 Shipped For Disposal During The Month

# BROWNS FERRY NUCLEAR PLANT

## CWPS Resin / Sludge

*Generation - Inventory - Shipped*



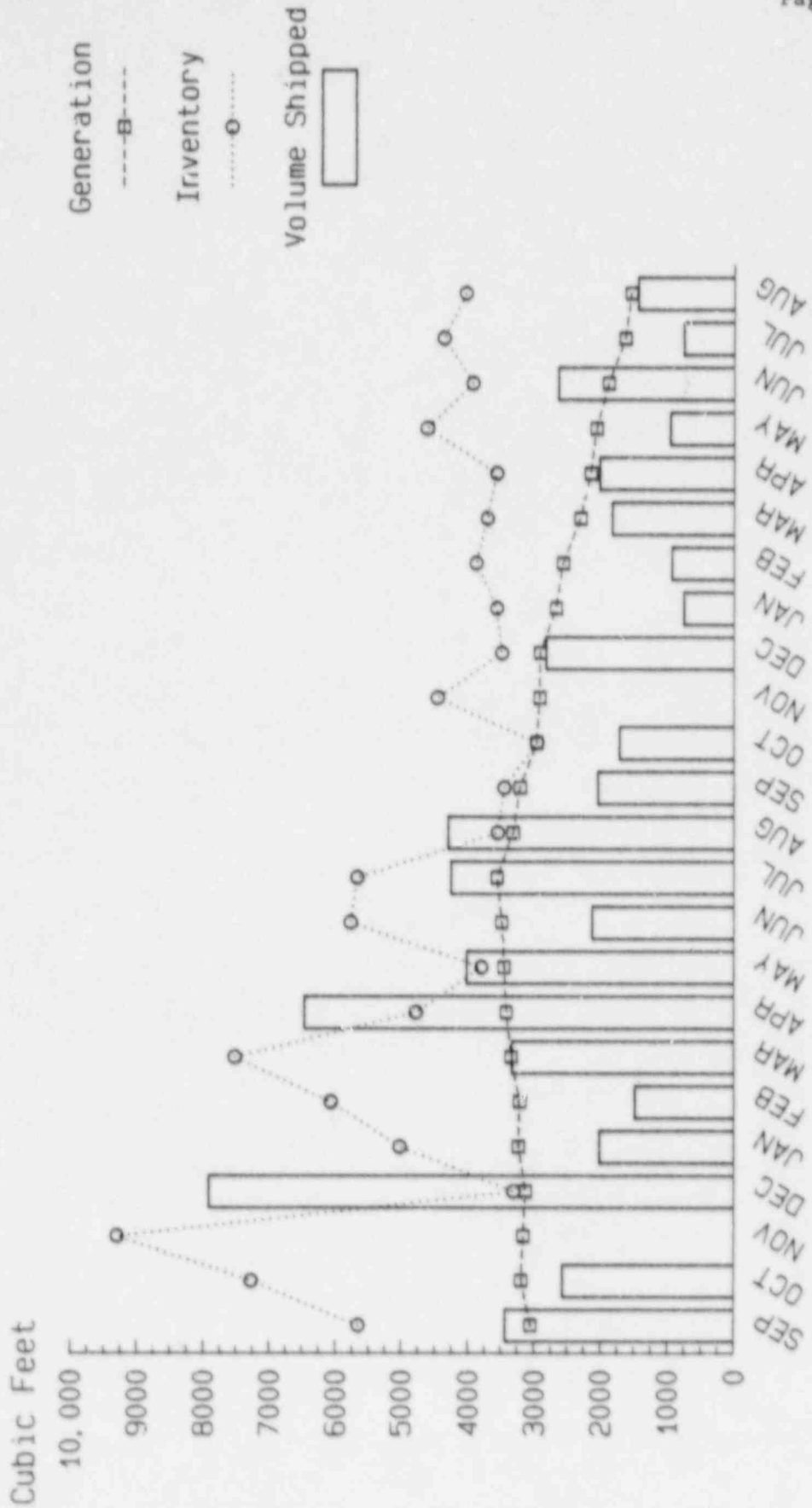
September 1986 thru August 1988

*Generation is 12-Month Sliding Average  
Inventory On Hand As Of Last Day Of Month  
Shipped For Disposal During The Month*

*Prepared By: BFP - Water & Waste Processing Grp  
Data Compiled By: Brian N. Woolweber  
September Scheduled Shipment Volume: 582 CuFt*

# BROWNS FERRY NUCLEAR PLANT

Dry Active Waste (DAW)  
 Generation - Inventory - Shipped



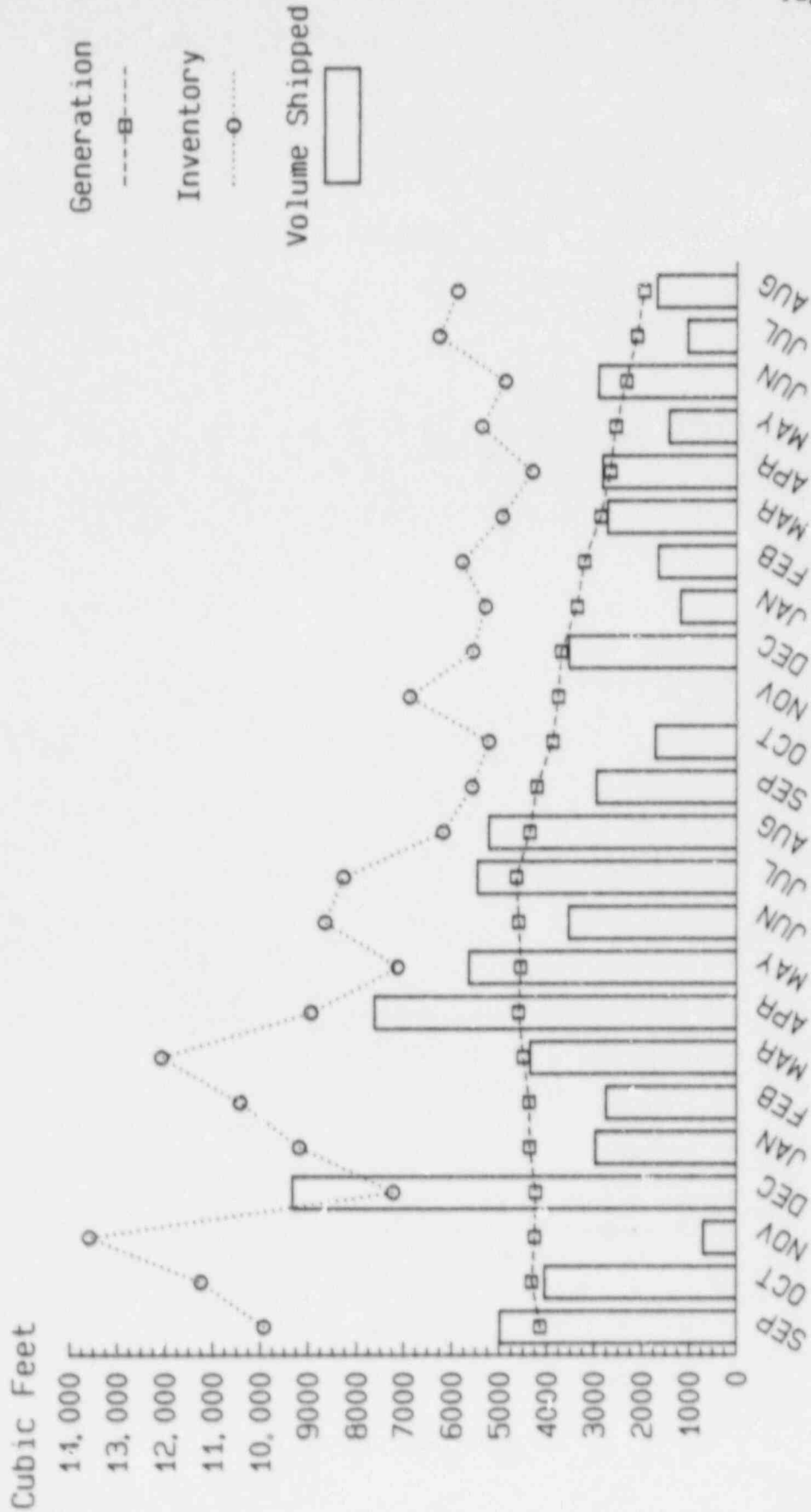
September 1986 thru August 1988

Generation is 12-Month Sliding Average  
 Inventory On Hand As Of Last Day Of Month  
 Shipped For Disposal During The Month



# BROWNS FERRY NUCLEAR PLANT

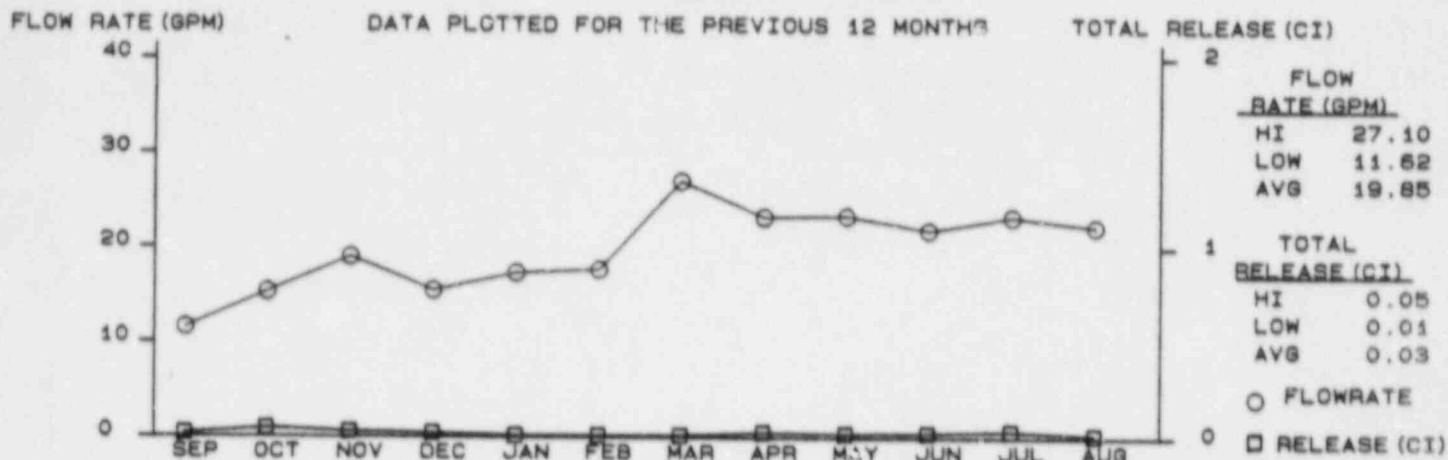
Low Level Radwaste  
 Generation - Inventory - Shipped



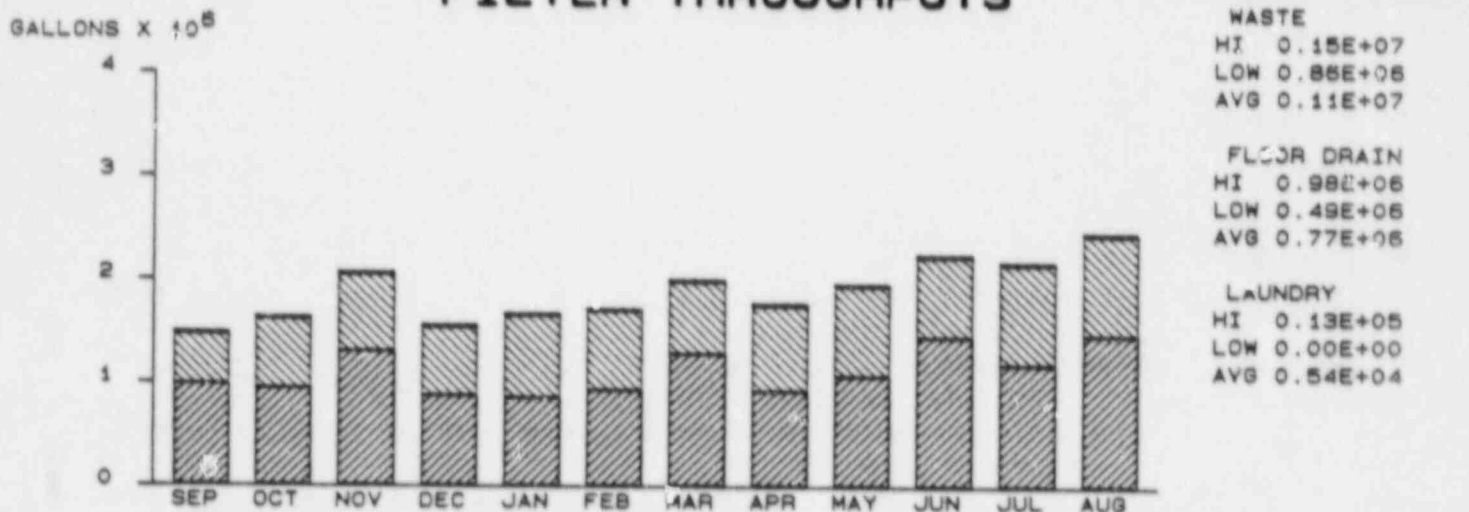
September 1986 thru August 1988

Generation is 12-Month Sliding Average  
 Inventory On Hand As Of Last Day Of Month  
 Shipped For Disposal During The Month

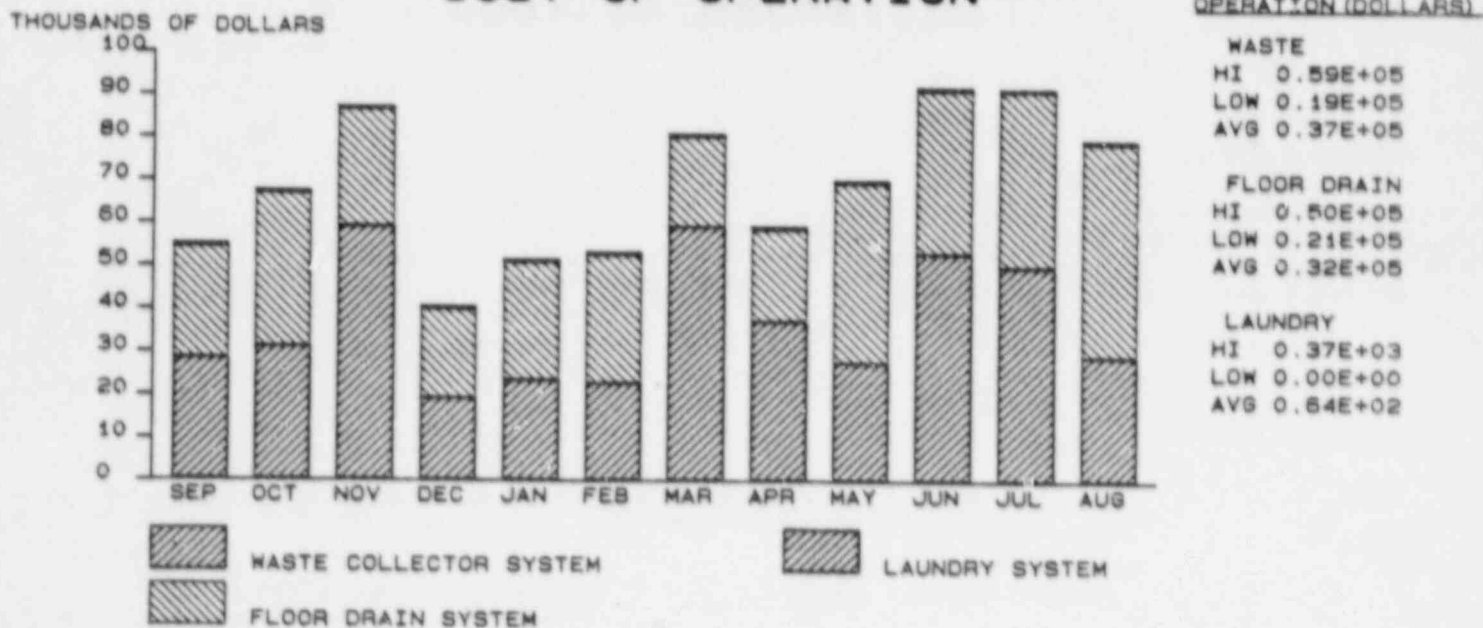
# LIQUID RADWASTE AUGUST 1988 TOTAL RIVER RELEASE



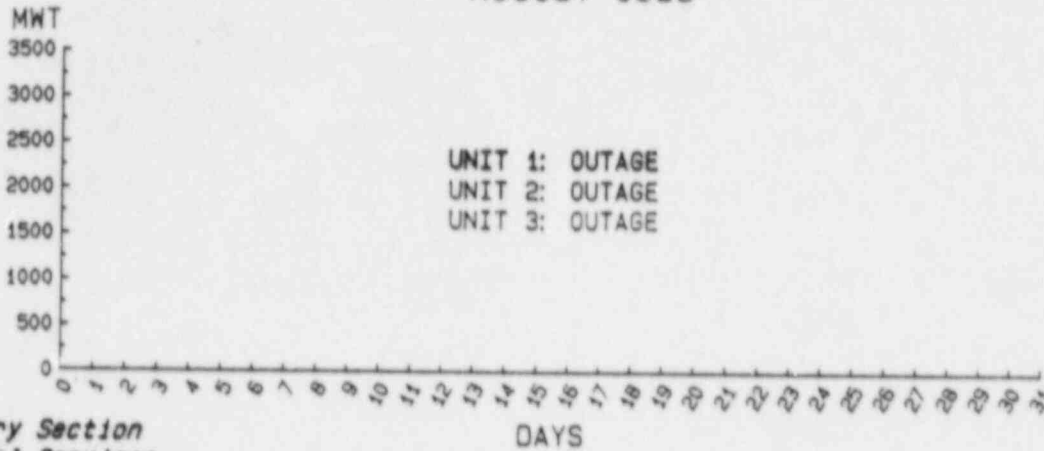
## FILTER THROUGHPUTS



## COST OF OPERATION

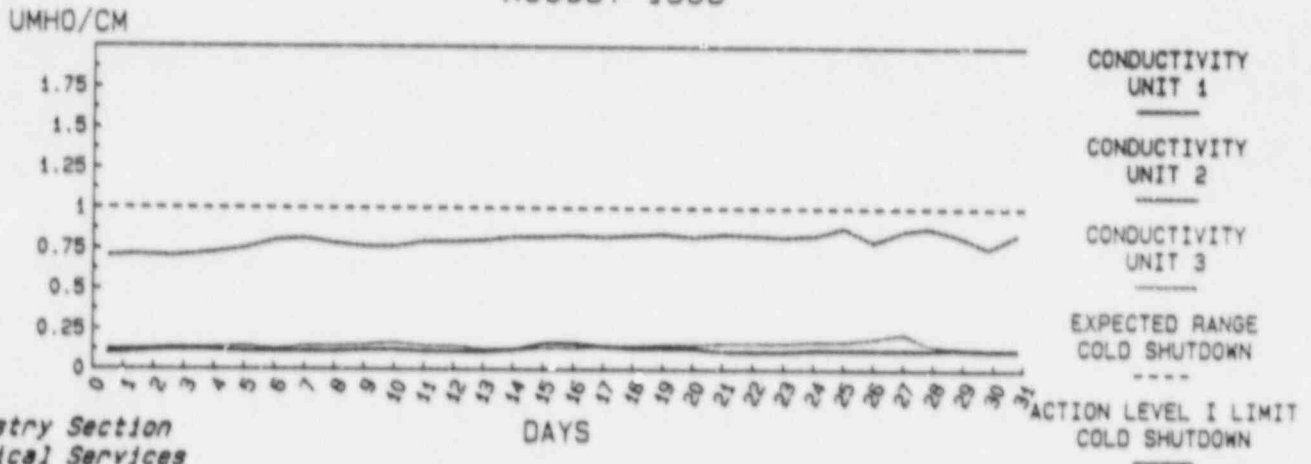


REACTOR POWER - MWT  
 UNITS 1, 2, AND 3  
 AUGUST 1988



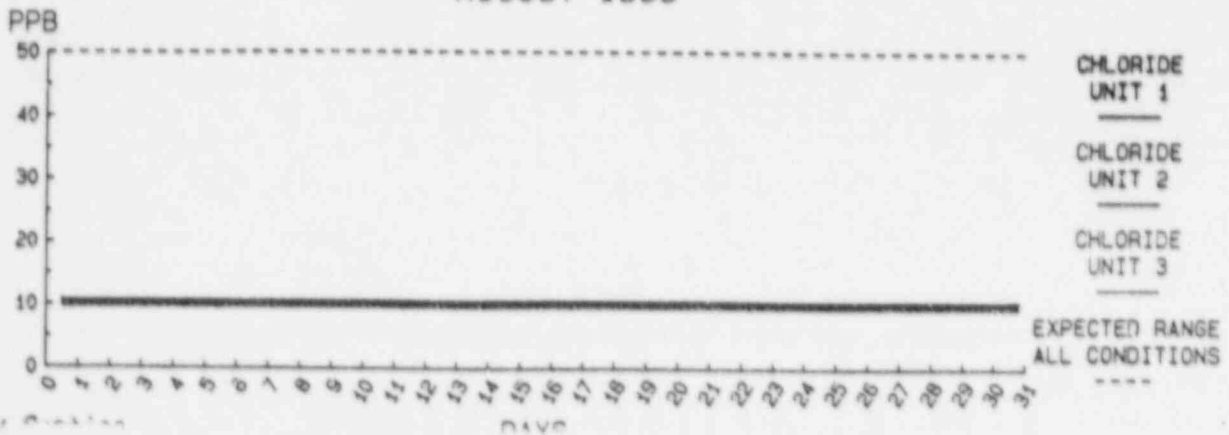
Chemistry Section  
 Technical Services  
 Browns Ferry Nuclear Plant

REACTOR WATER CONDUCTIVITY  
 UNITS 1, 2, AND 3  
 AUGUST 1988



Chemistry Section  
 Technical Services  
 Browns Ferry Nuclear Plant

REACTOR WATER CHLORIDE  
 UNITS 1, 2, AND 3  
 AUGUST 1988



Chemistry Section

OPERATING  
STATISTICS

DOCKET NO. 50-259  
 DATE 09-01-88  
 COMPLETED BY J. D. Crawford  
 TELEPHONE (205) 729-2567

OPERATING STATUS

- 1. Unit Name: Browns Ferry Unit One
- 2. Reporting Period: August 1988
- 3. Licensed Thermal Power (Mwt): 3293
- 4. Nameplate Rating (Gross Mwe): 1152
- 5. Design Electrical Rating (Net Mwe) 1065
- 6. Maximum Dependable Capacity (Gross Mwe) 1098.4
- 7. Maximum Dependable Capacity (Net Mwe) 1065
- 8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
N/A

Notes
-------

- 9. Power Level To Which Restricted, if Any (Net Mwe): N/A
- 10. Reasons For Restrictions, if Any: N/A

	This Month	Yr-to-Date	Cumulative
11. Hours in Reporting Period	<u>744</u>	<u>5855</u>	<u>123,535</u>
12. Number of Hours Reactor Was Critical	<u>0</u>	<u>0</u>	<u>59,521.38</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>6,997.44</u>
14. Hours Generator On-Line	<u>0</u>	<u>0</u>	<u>58,267.26</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>168,066,787</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>55,398,130</u>
18. Net Electrical Energy Generated (MWH)	<u>-4948</u>	<u>-33967</u>	<u>53,647,506</u>
19. Unit Service Factor	<u>0</u>	<u>0</u>	<u>47.20</u>
20. Unit Availability Factor	<u>0</u>	<u>0</u>	<u>47.20</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>0</u>	<u>40.80</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>0</u>	<u>40.80</u>
23. Unit Forced Outage Rate	<u>100</u>	<u>100</u>	<u>44.40</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):			

- 25. If Shut Down At End Of Report Period, Estimated Date of Startup To be determined
  - 26. Units In Test Status (Prior to Commercial Operation):
- |                      | Forecast | Achieved |
|----------------------|----------|----------|
| INITIAL CRITICALITY  | _____    | _____    |
| INITIAL ELECTRICITY  | _____    | _____    |
| COMMERCIAL OPERATION | _____    | _____    |

(9/77)

DOCKET NO. 50-260

DATE 09-01-88

COMPLETED BY J. D. Crawford

TELEPHONE (205) 729-2507

OPERATING STATUS

Notes
-------

1. Unit Name: Browns Ferry Unit Two
2. Reporting Period: August 1988
3. Licensed Thermal Power (Mwt): 3293
4. Nameplate Rating (Gross Mwe): 1152
5. Design Electrical Rating (Net Mwe) 1065
6. Maximum Dependable Capacity (Gross Mwe) 1098.4
7. Maximum Dependable Capacity (Net Mwe) 1065
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
N/A

9. Power Level To Which Restricted, if Any (Net Mwe): N/A
10. Reasons For Restrictions, if Any: N/A

	This Month	Yr-to-Date	Cumulative
11. Hours in Reporting Period	<u>744</u>	<u>5855</u>	<u>118,422.00</u>
12. Number of Hours Reactor Was Critical	<u>0</u>	<u>0</u>	<u>53,860.03</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>14,200.44</u>
14. Hours Generator On-Line	<u>0</u>	<u>0</u>	<u>54,338.36</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWh)	<u>0</u>	<u>0</u>	<u>153,245,167</u>
17. Gross Electrical Energy Generated (MWh)	<u>0</u>	<u>0</u>	<u>50,771,798</u>
18. Net Electrical Energy Generated (MWh)	<u>-2169</u>	<u>-16,695</u>	<u>49,167,138</u>
19. Unit Service Factor	<u>0</u>	<u>0</u>	<u>45.90</u>
20. Unit Availability Factor	<u>0</u>	<u>0</u>	<u>45.90</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>0</u>	<u>39.00</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>0</u>	<u>39.00</u>
23. Unit Forced Outage Rate	<u>100</u>	<u>100</u>	<u>43.90</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):			

25. If Shut Down At End Of Report Period, Estimated Date of Startup To be determined
26. Units In Test Status (Prior to Commercial Operation):

	Forecast	Achieved
INITIAL CRITICALITY	<u>      </u>	<u>      </u>
INITIAL ELECTRICITY	<u>      </u>	<u>      </u>
COMMERCIAL OPERATION	<u>      </u>	<u>      </u>

(9/77)

DOCKET NO. 50-296  
 DATE 09-01-88  
 COMPLETED BY J. D. Crawford  
 TELEPHONE (205) 729-2507

OPERATING STATUS

Notes
-------

1. Unit Name: Browns Ferry Unit Three
2. Reporting Period: August 1988
3. Licensed Thermal Power (Mwt): 3293
4. Nameplate Rating (Gross Mwe): 1152
5. Design Electrical Rating (Net Mwe) 1065
6. Maximum Dependable Capacity (Gross Mwe) 1098.4
7. Maximum Dependable Capacity (Net Mwe) 1065
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
N/A

9. Power Level To Which Restricted, if Any (Net Mwe): N/A
10. Reasons For Restrictions, if Any: N/A

	This Month	Yr-to-Date	Cumulative
11. Hours in Reporting Period	<u>744</u>	<u>5855</u>	<u>100,847.00</u>
12. Number of Hours Reactor Was Critical	<u>0</u>	<u>0</u>	<u>45,306.08</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>5,149.55</u>
14. Hours Generator On-Line	<u>0</u>	<u>0</u>	<u>44,194.76</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>131,868,267</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>43,473,760</u>
18. Net Electrical Energy Generated (MWH)	<u>-1577</u>	<u>-17,468</u>	<u>42,023,680</u>
19. Unit Service Factor	<u>0</u>	<u>0</u>	<u>43.80</u>
20. Unit Availability Factor	<u>0</u>	<u>0</u>	<u>43.80</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>0</u>	<u>39.10</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>0</u>	<u>39.10</u>
23. Unit Forced Outage Rate	<u>100</u>	<u>100</u>	<u>47.50</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):			

25. If Shut Down At End Of Report Period, Estimated Date of Startup To be determined
  26. Units In Test Status (Prior to Commercial Operation):
- |                      | Forecast      | Achieved      |
|----------------------|---------------|---------------|
| INITIAL CRITICALITY  | <u>      </u> | <u>      </u> |
| INITIAL ELECTRICITY  | <u>      </u> | <u>      </u> |
| COMMERCIAL OPERATION | <u>      </u> | <u>      </u> |

(9/77)

## AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259  
 Unit One  
 DATE 09-01-88  
 COMPLETED BY J.D. Crawford  
 TELEPHONE (205)729-2507

MONTH AUGUST 1988

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>-8</u>	17	<u>-7</u>
2	<u>-7</u>	18	<u>-7</u>
3	<u>-7</u>	19	<u>-7</u>
4	<u>-7</u>	20	<u>-7</u>
5	<u>-6</u>	21	<u>-6</u>
6	<u>-7</u>	22	<u>-7</u>
7	<u>-7</u>	23	<u>-7</u>
8	<u>-7</u>	24	<u>-7</u>
9	<u>-7</u>	25	<u>-5</u>
10	<u>-6</u>	26	<u>-4</u>
11	<u>-7</u>	27	<u>-6</u>
12	<u>-6</u>	28	<u>-7</u>
13	<u>-6</u>	29	<u>-7</u>
14	<u>-6</u>	30	<u>-7</u>
15	<u>-7</u>	31	<u>-7</u>
16	<u>-7</u>		

## INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.



## AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260  
 Unit Two  
 DATE 09-01-88  
 COMPLETED BY J.D. Crawford  
 TELEPHONE (205)729-2507

MONTH AUGUST 1988

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>-3</u>	17	<u>-3</u>
2	<u>-3</u>	18	<u>-3</u>
3	<u>-3</u>	19	<u>-3</u>
4	<u>-3</u>	20	<u>-3</u>
5	<u>-3</u>	21	<u>-3</u>
6	<u>-4</u>	22	<u>-3</u>
7	<u>-3</u>	23	<u>-3</u>
8	<u>-4</u>	24	<u>-3</u>
9	<u>-4</u>	25	<u>-1</u>
10	<u>-3</u>	26	<u>-1</u>
11	<u>-3</u>	27	<u>-3</u>
12	<u>-3</u>	28	<u>-3</u>
13	<u>-3</u>	29	<u>-3</u>
14	<u>-3</u>	30	<u>-2</u>
15	<u>-3</u>	31	<u>-3</u>
16	<u>-3</u>		

## INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

## AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-296  
 Unit Three  
 DATE 09-01-88  
 COMPLETED BY J.D. Crawford  
 TELEPHONE (205)729-2507

MONTH AUGUST 1988

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>-2</u>	17	<u>-2</u>
2	<u>-2</u>	18	<u>-2</u>
3	<u>-3</u>	19	<u>-2</u>
4	<u>-2</u>	20	<u>-1</u>
5	<u>-2</u>	21	<u>-2</u>
6	<u>-3</u>	22	<u>-2</u>
7	<u>-2</u>	23	<u>-2</u>
8	<u>-2</u>	24	<u>-2</u>
9	<u>-3</u>	25	<u>-1</u>
10	<u>-2</u>	26	<u>-1</u>
11	<u>-2</u>	27	<u>-2</u>
12	<u>-3</u>	28	<u>-2</u>
13	<u>-3</u>	29	<u>-2</u>
14	<u>-2</u>	30	<u>-2</u>
15	<u>-2</u>	31	<u>-2</u>
16	<u>-2</u>		

## INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

(277)

**UNIT SHUTDOWNS AND POWER REDUCTIONS**

DOCKET NO. 50-259  
 UNIT NAME One  
 DATE 09-01-88  
 COMPLETED BY J.D. Crawford  
 TELEPHONE (205) 729-2507

REPORT MONTH August

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
315	08/01/88	F	744	F	4				Administrative hold to resolve various TVA and NRC concerns.

<sup>1</sup>  
 F - Forced  
 S - Scheduled

<sup>2</sup>  
 Reason:  
 A - Equipment Failure (Explain)  
 B - Maintenance or Test  
 C - Refueling  
 D - Regulatory Restriction  
 E - Operator Training & License Examination  
 F - Administrative  
 G - Operational Error (Explain)  
 H - Other (Explain)

<sup>3</sup>  
 Method:  
 1 - Manual  
 2 - Manual Scram  
 3 - Automatic Scram  
 4 - Other (Explain)

<sup>4</sup>  
 Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

<sup>5</sup>  
 Exhibit I - Same Source

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-260  
 UNIT NAME Two  
 DATE 09-01-88  
 COMPLETED BY J.D. Crawford  
 TELEPHONE (205) 729-2507

REPORT MONTH August

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	License Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
305	08/01/88	F	744	F	4				Administrative hold to resolve various TVA and NRC concerns.

- 1 F Forced  
 S Scheduled
- 2 Reason:  
 A Equipment Failure (Explain)  
 B Maintenance or Test  
 C Refueling  
 D Regulatory Restriction  
 E Operator Training & License Examination  
 F Administrative  
 G Operational Error (Explain)  
 H Other (Explain)
- 3 Method:  
 1 Manual  
 2 Manual Scram  
 3 Automatic Scram  
 4 Other (Explain)
- 4 Exhibit G - Instructions for Preparation of Data Entry Sheets for License Event Report (LER) File (NUREG-0161)
- 5 Exhibit 1 - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-296

UNIT NAME Three

DATE 09-01-88

COMPLETED BY J.D. Crawford

TELEPHONE (205) 729-2507

REPORT MONTH August

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
157	08/01/88	F	744	F	4				Administrative hold to resolve various TVA and NRC concerns.

<sup>1</sup>  
F - Forced  
S - Scheduled

<sup>2</sup>  
Reason:  
A - Equipment Failure (Explain)  
B - Maintenance or Test  
C - Refueling  
D - Regulatory Restriction  
E - Operator Training & License Examination  
F - Administrative  
G - Operational Error (Explain)  
H - Other (Explain)

<sup>3</sup>  
Method:  
1 - Manual  
2 - Manual Scram  
3 - Automatic Scram  
4 - Other (Explain)

<sup>4</sup>  
Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

<sup>5</sup>  
Exhibit I - Same Source

(9/77)

BROWNS FERRY NUCLEAR Plant

Period Hours 744

Month August 1988

	Item No.	Unit No.	UNIT 1				UNIT 2				UNIT 3				PLANT					
Generation	1	Average Hourly Gross Load, kW	0				0				0				0					
	2	Maximum Hour Net Generation, MWh	0				0				0				0					
	3	Core Thermal Energy Gen, GWD (t) <sup>2</sup>	0				0				0				0					
	4	Steam Gen. Thermal Energy Gen., GWD (t) <sup>2</sup>																		
	5	Gross Electrical Gen., MWh	0				0				0				0					
	6	Station Use, MWh	4,948				2,169				1,577				8,694					
	7	Net Electrical Gen., MWh	-4,948				-2,169				-1,577				-8,694					
	8	Station Use, Percent	0				0				0				0					
	9	Accum. Core Avg. Exposure, MWD/Ton <sup>1</sup>	0				0				0				0					
	10	CTEG This Month, 10 <sup>6</sup> BTU	0				0				0				0					
	11	SGTEG This Month, 10 <sup>6</sup> BTU	0				0				0				0					
	Factors & Use	13	Hours Reactor Was Critical	0				0				0				0				
14		Unit Use, Hours-Min.	0				0				0				0					
15		Capacity Factor, Percent	0				0				0				0					
16		Turbine Avail. Factor, Percent	0				0				0				0					
17		Generator Avail. Factor, Percent	0				0				0				0					
18		Turbogen. Avail. Factor, Percent	0				0				0				0					
19		Reactor Avail. Factor, Percent	0				0				0				0					
20		Unit Avail. Factor, Percent	0				0				0				0					
21		Turbine Startups	0				0				0				0					
22		Reactor Cold Startups	0				0				0				0					
Efficiency		24	Gross Heat Rate, Btu/kWh	0				0				0				0				
	25	Net Heat Rate, Btu/kWh	0				0				0				0					
	26																			
	27																			
Temp & Press	28	Throttle Pressure, psig	0				0				0				0					
	29	Throttle Temperature, °F	0				0				0				0					
	30	Exhaust Pressure, InHg Abs.	0				0				0				0					
	31	Intake Water Temp., °F	0				0				0				0					
	32																			
Flows	33	Main Feedwater, M lb/hr																		
	34																			
	35																			
	36																			
Misc.	37	Full Power Capacity, EFPD (3)	(4)				(4)				(4)									
	38	Accum. Cycle Full Power Days, EFPD	(4)				(4)				(4)									
	39	Oil Fired for Generation, Gallons													21,400					
	40	Oil Heating Value, Btu/Gal.													139,800					
	41	Diesel Generation, MWh													235.2					
	42																			
Station Data	Max. Hour Net Gen.		Max. Day Net Gen.		Load Factor, %		X													
	MWh	Time	Date	MWh	Date															
43	0			0		0														
Remarks: 1 For BFNP this value is MWD/STU and for SQNP and WBNP this value is MWD/MTU.																				
2 (t) indicates Thermal Energy.																				
3 Information furnished by Reactor Analysis Group, Chattanooga																				
4 Administrative Hold																				



TVA 6566C (PP-3-76)

UNIT OUTAGE AND AVAILABILITY

Browns Ferry Nuclear Plant

Licensed Reactor Power 3293 MW(th)

Generator Rating 1152 MW(e)

Month/Year August 1988

Unit No. Two

Design Gross Electrical Rating 1098.4 MW

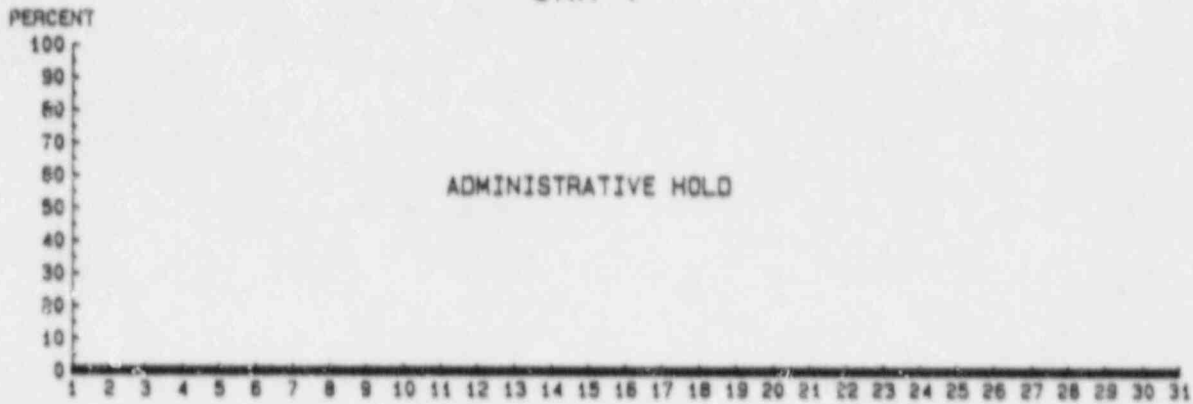
Period Hours 744

Day	Time Unit Available						Time Not Available						Unit		OUTAGE CAUSE	METHOD OF SHUTTING DOWN REACTOR	UNIT STATUS DURING OUTAGE	CORRECTIVE ACTION TAKEN TO PREVENT REPETITION	
	Total			Gen.			Turbine			Reactor			Time Out	Time In					
	hrs	min	sec	hrs	min	sec	hrs	min	sec	hrs	min	sec	hrs	min					hrs
1							24	00		24	00		24	00					
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23																			
24																			
25																			
26																			
27																			
28																			
29																			
30																			
31																			
Total							744	00		744	00		744	00					

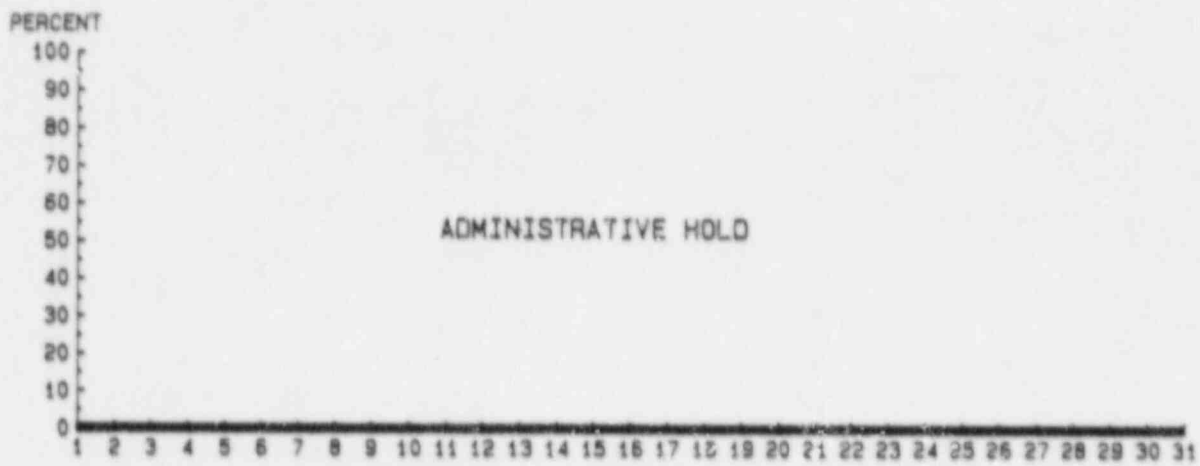




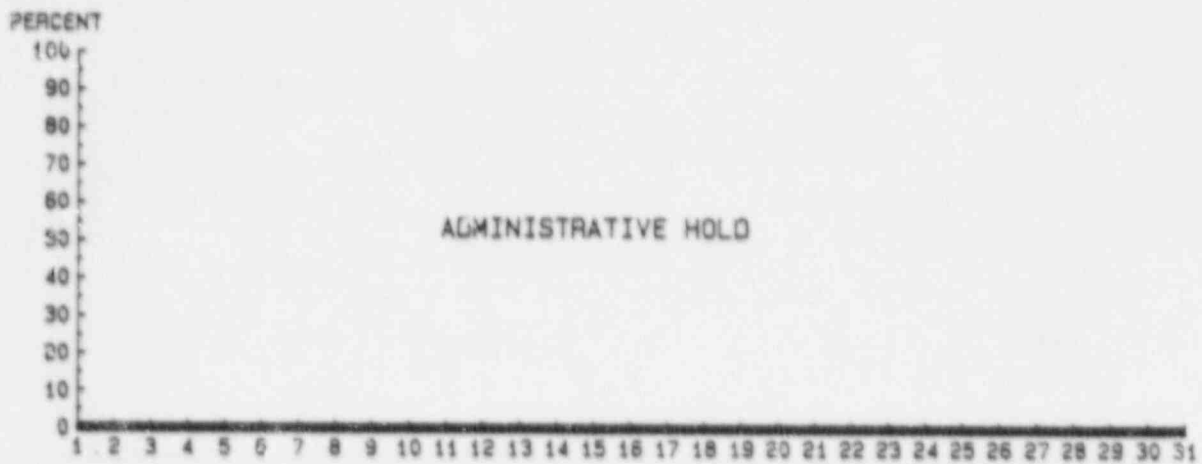
REACTOR POWER PERCENT  
AUGUST 1988  
UNIT 1



UNIT 2



UNIT 3



MAINTENANCE  
SUMMARY

MAINTENANCE SUMMARY

August 1988

Maintenance summaries unavailable for the month.

OTHER  
REPORTS

## CHEMISTRY SUMMARY

AUGUST 1988

Primary Coolant ChemistryUnit 1

The conductivity of the reactor coolant remained within technical specification and fuel warranty limits during the month. Chloride concentration and pH of the reactor coolant remained within technical specification and fuel warranty limits during the month. This calendar year, the technical specification and fuel warranty limits for conductivity and chloride have not been exceeded.

Unit 2

The conductivity of the reactor coolant remained within technical specification and fuel warranty limits during the month. Chloride concentration and pH of the reactor coolant remained within technical specification and fuel warranty limits during the month. This calendar year, the technical specification and fuel warranty limits for conductivity and chloride have not been exceeded.

Unit 3

The conductivity of the reactor coolant remained within technical specification and fuel warranty limits during the month. Chloride concentration and pH of the reactor coolant remained within technical specification and fuel warranty limits during the month. This calendar year, the technical specification and fuel warranty limits for conductivity and chloride have not been exceeded.

## PRIMARY COOLANT CHEMISTRY

AUGUST 1988

<u>Parameter</u>	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>
1. <u>Gross Radioactivity</u>			
a. <u>Crud (filter) (<math>\mu\text{ci/ml}</math>)</u>			
High	N/A	N/A	N/A
Low	N/A	N/A	N/A
Average	N/A	N/A	N/A
b. <u>Filtrate (<math>\mu\text{ci/ml}</math>)</u>			
High	N/A	N/A	N/A
Low	N/A	N/A	N/A
Average	N/A	N/A	N/A
2. <u>Milipore Iron (Fe,ppb)</u>			
High	N/A	N/A	N/A
Low	N/A	N/A	N/A
Average	N/A	N/A	N/A
3. <u>Tritium (<math>\mu\text{ci/ml}</math>)</u>			
High	4.61E-5	4.29E-5	1.17E-4
Low	3.95E-5	4.21E-5	9.50E-5
Average	4.218E-5	4.24E-5	1.096E-4
4. <u>Iodine-131 (<math>\mu\text{ci/ml}</math>)</u>			
High	<2.05E-6	<1.05E-6	<3.84E-7
Low	<5.19E-7	<8.67E-7	<3.01E-7
Average	<1.29E-6	<9.42E-7	<3.40E-7
5. <u>Iodine-131:Iodine-133 Ratio</u>			
High	N/A	N/A	N/A
Low	N/A	N/A	N/A
Average	N/A	N/A	N/A

## PRIMARY COOLANT CHEMISTRY (Continued)

AUGUST 1988

<u>Parameter</u>	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>
6. <u>Chloride (ppb)</u>			
High	<10	<10	<10
Low	<10	<10	<10
Average	<10	<10	<10
7. <u>pH@25°C</u>			
High	6.2	6.2	6.2
Low	6.0	5.9	5.9
Average	6.1	6.1	6.1
8. <u>Conductivity (µmho/cm@25°C)</u>			
High	0.16	0.88	0.22
Low	0.10	0.70	0.12
Average	0.13	0.80	0.14



ENVIRONMENTAL TECHNICAL SPECIFICATION REQUIREMENTS

The ambient upstream river temperature (24-hour average maximum) averaged 86.2°F ranging from 82.7°F on August 31 to 89.2°F on August 18. The downstream temperature varied between 82.9°F on August 31 to 88.9°F on August 18. The maximum river temperature rise was 0.9°F on August 31.

The sedimentation pond remained out of service for the entire month. An engineering design report for repairing the pond was submitted to the Alabama Department of Environmental Management for approval on August 29.

The sewage lagoon discharge was resumed on August 8. The effluent flow averaged 8,160 gallons per day with average BOD5 and TSS concentrations of 14 mg/l and 43 mg/l, respectively.

The plant did not experience any compliance problems during the month.

## AIRBORNE RELEASES(1)

AUGUST 1988

<u>SUMMATION OF ALL RELEASES</u>	<u>UNIT</u>	<u>THIS MONTH</u>
<b>A. FISSION AND ACTIVATION GASES</b>		
1. TOTAL RELEASE	CI	< 1.41E-02
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	< 5.85E-04
3. PERCENT OF TECH. SPEC. LIMIT(0.15 CI/SEC)	%	0.00E-01
<b>B. IODINES</b>		
1. TOTAL IODINE - 131	CI	< 4.40E-04
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	< 1.82E-04
3. PERCENT OF TECH. SPEC. LIMIT(2.19 UCI/SEC)	%	0.00E-01
<b>C. PARTICULATES</b>		
1. PARTICULATES WITH HALF-LIFES > OR = TO 8 DAYS	CI	2.23E-04
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	9.23E-05
3. PERCENT OF TECH. SPEC. LIMIT(2.19 UCI/SEC)	%	4.21E-03
4. GROSS ALPHA RADIOACTIVITY	CI	1.32E-05
<b>D. TRITIUM</b>		
1. TOTAL RELEASE	CI	2.74E-02
2. AVERAGE RELEASE RATE FOR PERIOD	UCI/SEC	1.13E-02
3. PERCENT OF TECH. SPEC. LIMIT(2.19 UCI/SEC)	%	5.16E-01
4. GROUND LEVEL RELEASE	CI	2.74E-02
5. ELEVATED RELEASE	CI	< 4.67E-04

(1) REPORTING PERIOD 28 DAYS

## AIRBORNE RELEASES (CONTINUED)

AUGUST 1988

## ELEVATED RELEASES

A.	FISSION GASES	UNIT	THIS MONTH
	KR-85M	CI	< 7.56E-02
	KR-85	CI	< 4.23E 01
	KR-87	CI	< 1.93E-01
	KR-88	CI	< 2.78E-01
	XE-133	CI	< 1.48E-01
	XE-135M	CI	< 4.63E-01
	XE-135	CI	< 9.78E-02
	XE-138	CI	< 1.09E 00
	OTHERS (SPECIFY)		
	TOTAL FOR PERIOD	CI	< 4.47E 01
B.	IODINES		
	I-131	CI	< 3.81E-06
	I-133	CI	< 7.17E-05
	I-135	CI	< 1.01E-01
	TOTAL FOR PERIOD	CI	< 1.01E-01

## AIRBORNE RELEASES (CONTINUED)

AUGUST 1988

## ELEVATED RELEASES

C.	PARTICULATES	UNIT	THIS MONTH
	SR-89	CI	< 4.10E-07
	SR-90	CI	< 1.64E-07
	CS-134	CI	< 4.49E-06
	CS-137	CI	< 5.88E-06
	BA-140	CI	< 1.07E-05
	LA-140	CI	< 8.41E-06
	OTHERS (SPECIFY)		
	TOTAL FOR PERIOD	CI	< 3.01E-05
D.	TRITIUM	CI	< 4.67E-04

## AIRBORNE RELEASES (CONTINUED)

AUGUST 1988

## GROUND RELEASES

## A. FISSION GASES

	UNIT	THIS MONTH
KR-85M	CI	< 2.36E-01
KR-85	CI	< 9.14E 01
KR-87	CI	< 7.24E-01
KR-88	CI	< 8.58E-01
XE-133	CI	< 6.23E-01
XE-135M	CI	< 6.75E-01
XE-135	CI	< 1.90E-01
XE-138	CI	< 1.84E 00

## OTHERS (SPECIFY)

TOTAL FOR	CI	< 9.68E 01
-----------	----	------------

## B. IODINES

I-131	CI	< 4.36E-04
I-133	CI	< 3.09E-03
I-135	CI	< 7.72E 00

TOTAL FOR PERIOD	CI	< 7.73E 00
------------------	----	------------

## AIRBORNE RELEASES (CONTINUED)

AUGUST 1988

## GROUND RELEASES

C.	PARTICULATES	UNIT	THIS MONTH
	SR-89	CI	< 2.31E-04
	SR-90	CI	< 8.51E-05
	CS-134	CI	< 4.03E-04
	CS-137	CI	< 4.90E-04
	BA-140	CI	< 7.97E-04
	LA-140	CI	< 5.58E-04
	OTHERS (SPECIFY)		
	CO-60	CI	2.23E-04
	TOTAL FOR PERIOD	CI	2.23E-04
D.	TRITIUM	CI	2.71E-02

BROWNS FERRY NUCLEAR PLANT  
MONTHLY REPORT CALCULATIONS  
LIQUID RELEASES  
AUGUST 1988

RADIOACTIVE LIQUID EFFLUENTS  
-----

1.	<u>GROSS RADIOACTIVITY</u>		UNITS	
	-----		-----	
	a) TOTAL RELEASE		CURIES	1.67E-02
	b) AVERAGE DILUTED CONCENTRATION RELEASED		UCI/ML	1.32E-09
	c) PERCENT OF APPLICABLE LIMIT ( 1E-7 UCI/ML )	%		1.32E 00
2.	<u>TRITIUM</u>			
	-----			
	a) TOTAL RELEASE		CURIES	1.14E-01
	b) AVERAGE DILUTED CONCENTRATION RELEASED		UCI/ML	8.99E-09
	c) PERCENT OF APPLICABLE LIMIT ( 3E-03 UCI/ML )	%		3.00E-04
		(1)		
3.	<u>DISSOLVED NOBLE GASES</u>			
	-----			
	a) TOTAL RELEASE		CURIES	< 7.25E-04
	b) AVERAGE DILUTED CONCENTRATION RELEASED		UCI/ML	< 5.73E-11
	c) PERCENT OF APPLICABLE LIMIT ( 2E-04 UCI/ML )	%		< 2.86E-05
4.	<u>GROSS ALPHA RADIOACTIVITY</u>			
	-----			
	a) TOTAL RELEASE		CURIES	< 1.94E-04
	b) AVERAGE DILUTED CONCENTRATION RELEASED		UCI/ML	< 1.54E-11
5.	<u>VOLUME OF LIQUID WASTE TO DISCHARGE CANAL</u>		LITERS	3.77E 06
	-----			
6.	<u>VOLUME OF DILUTION WATER</u>		LITERS	1.27E 10
	-----			

(1) INCLUDES XE-133, XE-135, AND OTHERS

BROWNS FERRY NUCLEAR PLANT  
MONTHLY REPORT CALCULATIONS  
LIQUID RELEASES  
AUGUST 1988

ISOTOPES RELEASED -----	UNITS ----- CI
CR-51	< 2.11E-03
MN-54	< 2.88E-04
CU-58	< 2.33E-04
FE-59	< 5.24E-04
CO-60	2.16E-03
ZN-65	2.46E-04
NB-95	< 2.29E-04
ZR-95	< 4.00E-04
HOTC-99M	< 1.80E-04
I-131	< 2.72E-04
XE-133	< 5.76E-04
CS-134	2.74E-03
XE-135	< 1.49E-04
CS-137	1.13E-02
BA-140	< 1.05E-03
LA-140	< 2.11E-04
CE-141	< 3.16E-04
SR-89	< 9.45E-05
SR-90	< 5.05E-05



BRONNS FERRY NUCLEAR PLANT  
MONTHLY REPORT CALCULATIONS  
LIQUID RELEASES  
AUGUST 1988

OTHERS

-----

UNITS

-----

CI

FE-55

< 9.11E-04

SB-125

2.38E-04

BROWNS FERRY NUCLEAR PLANT  
MONTHLY REPORT CALCULATIONS  
LIQUID RELEASES  
AUGUST 1988

LAUNDRY DRAIN VOLUME RELEASED:	0.0	GALLONS
FLOOR DRAIN VOLUME RELEASED:	887021.5	GALLONS
WASTE SAMPLE TANK VOLUME RELEASED:	107710.1	GALLONS
DISTILLATE TANK VOLUME RELEASED:	0.0	GALLONS
LOCATION OTHER THAN RADWASTE VOLUME RELEASED:	0.0	GALLONS
TOTAL VOLUME RELEASED TO THE RIVER:	994731.6	GALLONS
HIGHEST BATCH ACTIVITY RELEASED FOR MONTH:	3.53E-09	UCI/NL A/D
LONGEST RELEASE TIME FOR MONTH:	351	MINUTES
SHORTEST RELEASE TIME FOR MONTH:	117	MINUTES
TOTAL TIME OF RELEASES FOR MONTH:	8355	MINUTES
AVERAGE TIME FOR BATCH RELEASES:	239	MINUTES

NUMBER OF BATCHES RELEASED:	35
NUMBER OF ADMINISTRATIVE LIMIT VIOLATIONS:	0
NUMBER OF TECHNICAL SPECIFICATION VIOLATIONS:	0

## RESIN USAGE REPORT

AUGUST 1988

RESIN CONSUMED (CU.FT.)

	<u>% of</u>						
	<u>Total</u>	<u>Bead</u>	<u>POWDEX</u>	<u>ECODEX</u>	<u>ECOSORB</u>	<u>EPIFLOC</u>	<u>Total</u>
<u>Radwaste</u>							
Floor Drain Filter	61.8	0	136	0	0	146	282
Waste Demineralizer	0	0	0	0	0	0	0
Waste Filter	34.7	0	104	0	3	51	158
Fuel Pool Demins	0.9	0	4	0	0	0	4
<u>Reactor Water Cleanup</u>							
Unit 1	0	0	0	0	0	0	0
Unit 2	0	0	0	0	0	0	0
Unit 3	0.4	0	2	0	0	0	2
<u>Cond. Demins</u>							
Unit 1	0	0	0	0	0	0	0
Unit 2	2.2	0	10	0	0	0	10
Unit 3	0	0	0	0	0	0	0
Totals	100	0	256	0	3	197	456

FUEL CLADDING INTEGRITY PARAMETERS  
AUGUST 1988

Unit 1

Reactor Water Iodines (uci/sec.)

<u>Date</u>	<u>I-131</u>	<u>I-132</u>	<u>I-133</u>	<u>I-134</u>	<u>I-135</u>
-------------	--------------	--------------	--------------	--------------	--------------

Unit in Outage

Fission Gases at Discharge of SJAE (uci/sec)

<u>Date</u>	<u>Flow</u>	<u>Mwt</u>	<u>Xe-138</u>	<u>Kr-87</u>	<u>Kr-88</u>	<u>Kr-85m</u>	<u>Xe-135</u>	<u>Xe-133</u>
-------------	-------------	------------	---------------	--------------	--------------	---------------	---------------	---------------

Unit in Outage

Unit 2

Reactor Water Iodines (uci/sec.)

<u>Date</u>	<u>I-131</u>	<u>I-132</u>	<u>I-133</u>	<u>I-134</u>	<u>I-135</u>
-------------	--------------	--------------	--------------	--------------	--------------

Unit in Outage

Fission Gases at Discharge of SJAE (uci/sec)

<u>Date</u>	<u>Flow</u>	<u>Mwt</u>	<u>Xe-138</u>	<u>Kr-87</u>	<u>Kr-88</u>	<u>Kr-85m</u>	<u>Xe-135</u>	<u>Xe-133</u>
-------------	-------------	------------	---------------	--------------	--------------	---------------	---------------	---------------

Unit in Outage

Unit 3

Reactor Water Iodines (uci/sec.)

<u>Date</u>	<u>I-131</u>	<u>I-132</u>	<u>I-133</u>	<u>I-134</u>	<u>I-135</u>
-------------	--------------	--------------	--------------	--------------	--------------

Unit in Outage

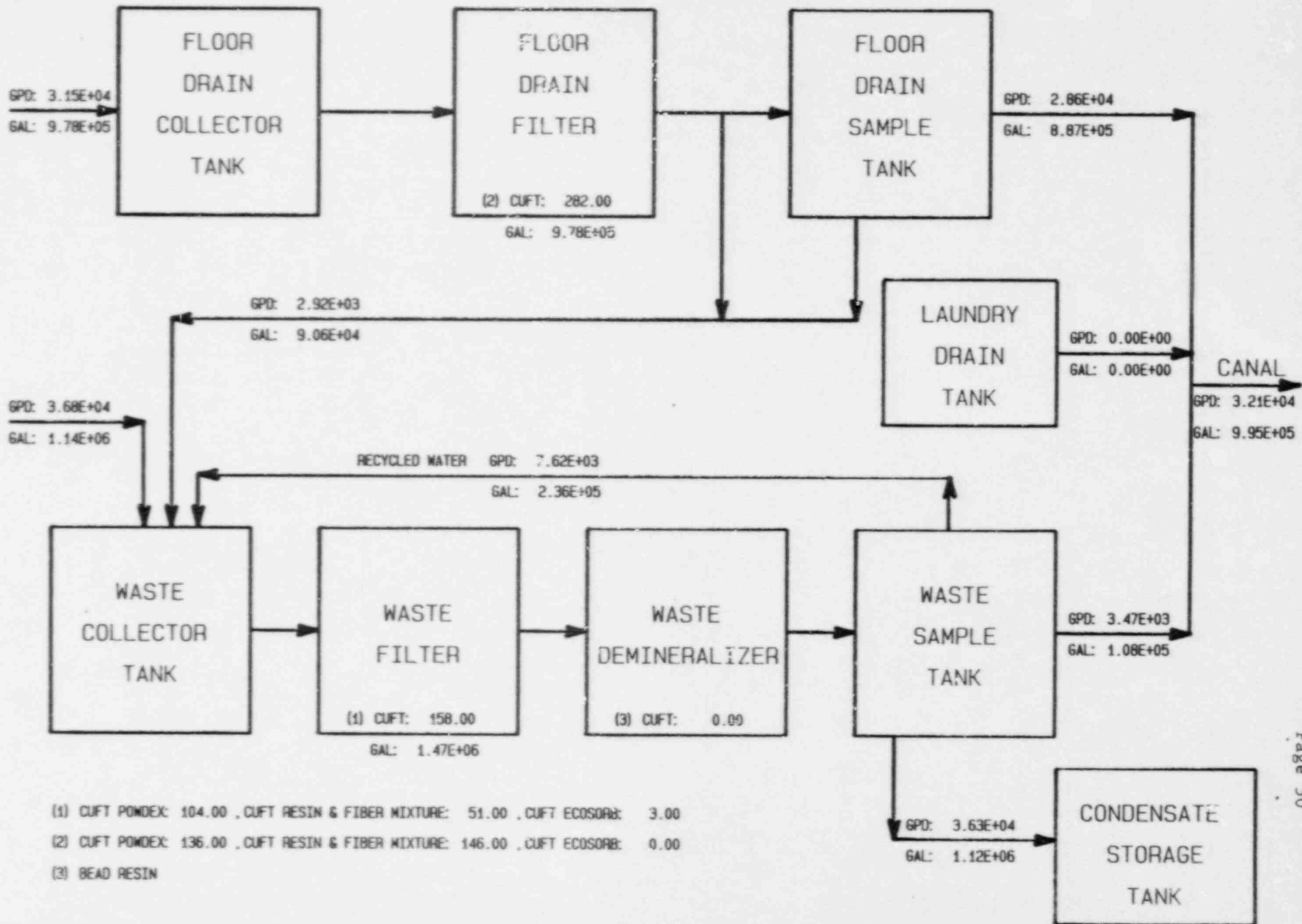
Fission Gases at Discharge of SJAE (uci/sec)

<u>Date</u>	<u>Flow</u>	<u>Mwt</u>	<u>Xe-138</u>	<u>Kr-87</u>	<u>Kr-88</u>	<u>Kr-85m</u>	<u>Xe-135</u>	<u>Xe-133</u>
-------------	-------------	------------	---------------	--------------	--------------	---------------	---------------	---------------

Unit in Outage

# WASTE TREATMENT SYSTEM THROUGHPUTS

AUGUST 1988



TESTING SUMMARY

AUGUST 1988

Surveillance Testing

Unit 0

A total of 186 surveillance tests were completed using 51 different test instructions.

Unit 1

A total of 63 surveillance tests were completed on unit 1 using 24 different test instructions.

Unit 2

A total of 114 surveillance tests were completed on unit 2 using 39 different test instructions.

Unit 3

A total of 77 surveillance tests were completed on unit 3 using 23 different test instructions.

TESTING SUMMARY

(CONTINUED)

AUGUST 1988

Changes, Tests, and Experiments Requiring Authorization From the NRC Pursuant to 10 CFR 50.59(a)

There were two revisions for units 1, 2, and 3 technical specifications.

Changes, Tests, and Experiments not Requiring Authorization from NRC Pursuant to 10 CFR 50.59(a)

There were two special tests completed for this month.

ST 87-29 Description: Hayes-Republic H<sub>2</sub>O<sub>2</sub> Analyzer Hostile Environment

ST 88-15 Description: Ventilation System Flow Measurement 2

REACTOR VESSEL FATIGUE USAGE EVALUATION

AUGUST 1988

The cumulative usage factors for the reactor vessel are as follows:

<u>Location</u>	<u>Usage Factor</u>		
	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>
Shell at water line	0.00620	0.00492	0.00431
Feedwater nozzle	0.29782	0.21319	0.16139
Closure studs	0.24204	0.17629	0.14360



CHANGES IN PROCEDURES

AUGUST 1988

There were 515 revisions to plant instructions during the month; 515 instructions were changed primarily for correction, and zero revisions related to safe operation of the plant.

PLANT INSTRUCTION REVISIONS

AUGUST 1988

There were no revisions for the month.

CHANGES IN PLANT ORGANIZATION

AUGUST 1988

There were six changes in plant staff for those positions designated as key supervisory positions. They were as follows: Levyn W. Ivey, Nuclear Engineer, Site Licensing; Jimmy D. Johnson, Work Control/Outage Shift Manager; Jerry S. Olson, Assistant Plant Manager; John L. Sparks, Supervisor NSSS; Robert McKeon, Manager, Plant Manager's Staff; and W. Gary Harland, Manager Work Control/Outage.

ACCIDENTS

AUGUST 1988

There were two loss-of-time accidents during the month.

1724n

TENNESSEE VALLEY AUTHORITY

Browns Ferry Nuclear Plant

Post Office Box 2000

Decatur, Alabama 35602

SEP 19 1988

U.S. Nuclear Regulatory Commission  
Airtel: Document Control Desk  
Office of Nuclear Reactor Regulation  
Washington, D.C. 20555

Attention: Office of Management Information and Program Control

In the Matter of the ) Docket Nos. 50-259  
Tennessee Valley Authority ) 50-260  
50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - MONTHLY OPERATING REPORT - AUGUST 1988

Enclosed is the August 1988 Monthly Operating Report to NRC for Browns Ferry Nuclear Plant units 1, 2, and 3.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*G. G. Campbell III*

Guy G. Campbell III  
Plant Manager

Enclosure

cc: INPO Records Center  
Institute of Nuclear Power Operations  
Suite 1500  
1100 Circle 75 Parkway  
Atlanta, Georgia 30389

Mr. G. G. Zech, Director  
TVA Projects Division  
One White Flint, North  
11555 Rockville Pike  
Rockville, Maryland 20852

U.S. Nuclear Regulatory Commission  
Region II  
Attn: Dr. J. Nelson Grace,  
Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Browns Ferry Resident Inspector  
Browns Ferry Nuclear Plant  
Route 12, Box 637  
Athens, Alabama 35611

Mr. Ted Marston, Director  
Electric Power Research Institute  
P. O. Box 10412  
Palo Alto, California 94304

*TEA*  
*11*